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To cite this article: Naomi S. Alphonsus & Johannes Karl Schmees (22 Dec 2024): A community for expertise development – South African vocational colleges and their internal and external social characteristics, Journal of Vocational Education & Training, DOI: [10.1080/13636820.2024.2443918](https://doi.org/10.1080/13636820.2024.2443918)

To link to this article: <https://doi.org/10.1080/13636820.2024.2443918>



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Published online: 22 Dec 2024.



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A community for expertise development – South African vocational colleges and their internal and external social characteristics

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ABSTRACT

In recent decades, reforms of technical and vocational education and training (TVET) systems have mostly focused on the needs of employers to produce graduates ready for the labour market. The academic literature has extensively criticised the narrow focus on the performance of work tasks at the expense of other types of knowledge in the curriculum. In our paper, we reflect on the evidence that a curriculum that delivers the appropriate development of expertise can be associated with colleges that incorporate certain *social characteristics*. These characteristics were found in the way colleges deliberately build collaborative relationships internally through *teamwork*, conflict resolution among their disciplinary experts, and externally through *partnerships* with employers. In addition, those colleges externally *mediated* employer's skills expectations of students and internally *translated* the curriculum. Our analysis is based on a study of well-resourced vocational colleges in South Africa, two of which emerged as successful, in contrast to one college that failed to contribute to the appropriate professional development of its students which differed in that the latter lacked these social characteristics. Thus, in addition to resources as an appropriate precondition, we argue that the development of expertise is strongly related to how vocational colleges manifest their social characteristics.

ARTICLE HISTORY


Received 31 May 2024
Accepted 11 November 2024

KEYWORDS

Community of practice;
expertise development;
social characteristics;
vocational college

1. Introduction

In this paper, we lay out evidence that suggests that the teaching and learning process that supports appropriate expertise development for practice in technical and vocational education and training (TVET) learning programmes has a strong connection to the social characteristics both within the vocational college community and of this community with the outside world. The analysis

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that supports our argument emerged from a research project that focused on how a select group of vocational colleges in South Africa which were delivering appropriate expertise development were constructing their curriculum. We are using 'appropriate expertise development' to broaden the notion of preparation for work beyond qualifications, curriculum and assessments to include a deeper understanding of the relationship between specialised knowledge and the social organisation of TVET actors in training for expert practice (Alphonsus 2023b). The analysis revealed the expected attributes to good curriculum development and delivery such as subject matter in the teaching staff, sufficient resources for teaching and learning processes and both student and staff mentorship. However, what ensured that appropriate expertise development was that the expected attributes functioned in a college community whose environment contained broad social characteristics of collaboration and mediation. We highlight these social characteristics to contrast the popular technocratic approaches to outlining curriculum content found in the competency-based training, in short CBT (Allais 2012; Muller 2004; Wheelahan 2015), and the occupational standards development (Alphonsus 2022) shaped by notions of demand has driven education to improve preparation for work. Wheelahan and Moodie (2024, 1) explained how CBT approaches in market-led policies undermine the institutional characteristics of vocational colleges: 'There is no need to build institutions, worry about institutional capacity, or consider the broader role that colleges play in their communities or the purposes of education, because "the market" will respond to whatever need arises.' Where advocates of CBT will argue that designing a curriculum for preparation for work based on outlining tasks that employers expect the worker to perform, our analysis shows that a partnership between colleges and employers underpinned by a relationship that supports collaboration and mediation is an important prerequisite/condition for appropriate expertise development. Thus, our analysis in this paper provides empirical evidence in describing how to build institutional capacity and the important role of colleges in building communities for developing appropriate expertise that are essential to occupational practice.

South Africa provides an ideal background for identifying the importance of social characteristics of collaboration and mediation and its connection to appropriate expertise development given its complex history with different popular educational reforms and how they have shaped South African TVET. During apartheid and from the 1970s, TVET programmes had distinctly separate components where students had blocks of theoretical learning at college and were apprentices at their employers for the rest of the learning programme (Gamble 2021b; Wedekind 2018). The 1980s saw a substantial decline in available TVET due to the early de-industrialisation (Wedekind 2018). Moving to democratic era, the overhaul of the education system was seen as driven by CBT approaches found in the introduction of the National Qualification

Framework and a plethora of associated regulatory bodies. CBT approaches in TVET (Allais 2011; Young and Gamble 2006) can be best symbolised by the, relatively unsuccessful, learnerships, which was a mode of training focused solely on learning to perform tasks in the workplace with little or no theoretical training (Muller 2004). However, traditional apprenticeships continued to exist because of the substantial manoeuvring by employers and training providers (Alphonsus 2023a). The next phase of regulatory changes occurs after the introduction of the Occupational Qualifications Sub-Framework Policy under the NQF where TVET programmes require knowledge, practical skills and work experience combining learning at the vocational college and the employer into a more integrated learning programme (NQF Act, 2008 [Act No. 67 of 2008]: Revised OQSF, 2021). The problem with moving away from CBT approaches which seemingly provide a defined task description for training and practice is that it requires engagement with the environment within which training, and practice occur in a more complex way (Alphonsus 2023a).

In these educational reforms, one aspect not clearly considered is that while the job specifications for employers consider their needs, the broader aim of vocational colleges is the development of appropriate expertise for the occupation where graduates have sufficient knowledge and skills beyond specific employer needs. We use Alphonsus (2023b) occupational capacity conceptual framework which centres the relationship between specialised knowledge consisting of systematically organised knowledge, practical skills, occupational practice and autonomy as well as social organisation of work made up of professional bodies, institutions and the state to understanding the development and practice of appropriate expertise. Thus, in line with alternatives to CBT, our paper builds on Alphonsus (2023b) conceptual framework in extending our understanding of the relationship between specialised knowledge and the social organisation of work in preparation for work for expert practice. Thus, the paper focuses on evidence that shows how vocational colleges act towards this goal. Our key finding is that both mediation and collaboration within the college and with outside partners is a crucial aspect.

The next section discusses the conceptual framing for the paper and where the work in this paper is located within the broad literature in TVET. The thenfollowing section describes the sample and the approach to interviews in the data collection as well as our further coding of data for collaboration and mediation. The following main section describes the four social characteristics of colleges, teamwork, translation, as well as mediation and partnership. The final section concludes by identifying how these social characteristics in colleges may be more closely associated with the development and delivery of curriculum and training in TVET programmes than expected, and how different social pressures play roles in shaping these characteristics.

2. Conceptualising expertise development in the vocational college

The paper is located within contentious debates of preparation for work, especially in TVET systems. Where systems have been strongly influenced by Anglo-Saxon narratives, the prominence of the functional job descriptions in CBT approaches (Harris et al. 1995; Jessup 1989) from the 1980s alongside its critique (Allais 2012; Muller 2004; Wheelahan 2015) has seen increasing dialogue on more holistic ways of training in occupational pathways (Gamble 2020, 2021a; Wheelahan, Buchanan, and Yu 2015; Wheelahan, Moodie, and Buchanan 2012). While Central European systems are foregrounded as containing more holistic training traditions, their systems are impossible to transfer into other environments given the long history of skill–actor relationship formation that underpins their systems (Thelen 2004) and alongside with the embeddedness in their contexts.

South African TVET policy has been heavily influenced by CBT approaches found in Anglo-Saxon contexts such as Australia, New Zealand and the United Kingdom. Notwithstanding, South African and international scholars extensively critiqued the approaches for fragmenting the learning process by prioritising task performance in curriculum content and assessment (Allais 2012; Muller 2004; Wheelahan 2015). Additionally, scholars have highlighted the lack of knowledge essential for performing work in CBT (Muller 2004; Wheelahan 2015; Young and Gamble 2006). Acknowledging this critique, South Africa implemented occupational qualifications moving away from training focused on task performance and towards a more holistic form of training (Alphonsus 2023a). However, there is concern on how the regulator has set out an occupational and intended curriculum that shows the prioritisation of task performance in TVET programmes drawn from this qualification (Alphonsus 2023a; Gamble 2021a). Alternatives to CBT are often introduced in TVET pathways which attempt to move away from task performance (Gamble 2020, 2021a; Wheelahan, Buchanan, and Yu 2015; Wheelahan, Moodie, and Buchanan 2012).

In her work, Alphonsus (2023b) expanded the concept of Christopher Winch's (2010) occupational capacity as the basis for TVET that develops appropriate expertise, the conceptual framework draws on scholarship from different disciplines (philosophy of education, sociology of work and political economy) to outline factors that shape occupational capacity (Abbott 1988, 1989; Friedson 2001; Standing 2009; Winch 2010, 2013, 2014, 2015). A strong theme emphasised in occupational capacity is the relationship between training and practice in occupations that contains internal characteristics of specialised knowledge, which encapsulates systematically organised knowledge, occupational practice, skill and autonomy; and an external force comprising the social organisation of work by professional bodies, institutions and state regulation. Alphonsus (2023b) argues that further theorising occupational capacity provides a more holistic understanding of appropriate expertise development based in

a complex social, political and economic system and thus provides an alternative to Anglo-Saxon notions of CBT approaches that prioritise task performance and foregrounds supply and demand notions of skills development for TVET.

However, in applying the framework to a recent study (Alphonsus 2024) on the development and delivery of regulatory requirements for TVET programmes, we found that the framework needed to be explored further to understand the establishment, management and evolving nature of specialised knowledge and the different social relationships needed for appropriate expertise development. We found that 'occupational capacity' was a good foundation to start understanding the requirements for training to practise but a much broader approach to investigating TVET systems is needed. TVET systems are unique because of the inherent requirement that training must occur in the significantly different domains of education and work. Especially as TVET systems contain complexity on the micro level (what occurs during training at the college and workplace), meso level (what occurs in the professional bodies, industry groups, socio-political concerns) and macro level (state regulation, labour markets, funding, economic performance and national and international trends, technology etc.) where relationships are associated with power dynamics and hierarchies that shape the expression of appropriate expertise development. Thus, the framework is underpinned by theoretical work from varied disciplines that acts as a prism to understand the relationship between education and work in developing appropriate expertise. The approach analyses the connections between the different actors (state, employers, educators, work trainers, industry and professional bodies, international organisations) where their associated agenda shape training to practise. At the same time, the approach analyses specialised knowledge embodied in expert practice where learning to practice involves sequencing types of knowledge to construct the connections required for inferential comprehension abilities demonstrated in expert practice. Thus, the approach highlights the myriads of relationships between actors shaping specialised knowledge while examining the evolving nature of specialised knowledge related to expert practice.

The need to further develop the framework concepts for appropriate occupational expertise was because the concepts used in the analysis for the research (2024) evolved as data collected highlighted that a college's ability to interpret regulatory curriculum requirements for a learning programme seemed dependent on the kind of teaching community that existed in the college. Interestingly, the relationships, and the emphasis on deliberate relationship building, between staff members and with the community (employers, parents, recruiters and trainers at employers) had strong connections to the construction of appropriate and agile training for practice. Prior conceptual work in appropriate occupational expertise for practice (Alphonsus 2023b) and the institutions and skills development (Wedekind

2019; Wedekind and Mutereko 2016) were not sufficient for the analysis of the data in two ways. Firstly, specialised knowledge in training and practice was shaped by external actors in professional bodies and institutions. What was not considered is that the formulation of specialised knowledge for training in teaching and learning processes seems to emerge out of a college community with certain social characteristics. Secondly, while Wedekind's (2019) use of Scott's (2013) work in the institution's literature signals that social and behavioural patterns exist in building robust colleges that can deliver appropriate expertise development – linking social characteristics in the data to a notion of social and behavioural patterns is missing. In a similar vein to the institution's literature, the hidden curriculum approach (Giroux and Penna 1979) had some similarities to social characteristics identified in the literature, but the focus was on pedagogical interventions 'added' to the curriculum for the student rather than explaining characteristics of social community that lead to identifying, developing and delivering these interventions for preparation for work.

In further conceptualising occupational capacity (Alphonsus 2023b) which captured appropriate expertise development for practice by highlighting how internal characteristics of specialised knowledge were shaped by actors in an external force of the social organisation of work. However, in recent research (Alphonsus 2024) while trying to understand how development and delivery of the requirements of learning programmes occurred, what became clear is that the way tension expressed in *specialised knowledge* required for expert practice and the external forces in the *social organisation of work* required some type of mediation to be translated into training. Despite the addition of institutionalism literature which highlights that different social, cultural and intellectual pillars (Scott 2013) provide the means to which an organisation can go about their activities (Wedekind 2019) – the problem with the concepts was that while this kind of generalisation points to some conditions in an environment that support organisational processes and attainment of goals, the formulation of different factors that highlight social characteristics within appropriate expertise development at colleges was vague within the concepts. Upon reflection, what we found missing in the conceptualisation of occupational capacity was that in specialised knowledge were the connections made between systematically organised knowledge, skill, occupational practice and autonomy as required for training for expert practice – however – there is not a substantive discussion on how these connections are made in pedagogic practice and why these practices may need different considerations and conditions in vocational colleges. This paper shows that the social characteristics of these colleges shape pedagogic practice that ultimately leads to appropriate expertise development.

3. Methodology

The article draws from data from a project (Alphonsus 2024) that initially identified vocational colleges that were 'high' performing based on their ability to secure student work experience and national trade tests where the aim was to investigate the defining features of the enacted curriculum in the development and delivery of the learning programmes. While this initial assumption was later found to be problematic, the interviews highlighted the different ways in which colleges think about and translate requirements for TVET programmes. Broadly, the sample represented five colleges that delivered TVET programmes – geographically based in urban and rural areas and either private-, public- or mixed-funded. This paper draws from 15 semi-structured interviews conducted with vocational college staff and some trade associated examination experts, the broad groupings of senior management, teaching and learning experts, lecturers, assessors, moderators, work experience managers and regulatory management staff. The project methodology was qualitative where the methodology falls under phenomenological studies. In explaining phenomenological studies, we follow Creswell (2007) to describe the aim of data collection: 'The inquirer then collects data from persons who have experienced the phenomenon and develops a composite description of the essence of the experience for all individuals. This description consists of "what" they experienced and "how" they experienced it' (Creswell 2007, 58). The five colleges in the sample were unique because they were well resourced, this means that their infrastructure and equipment were accessible, the learning programmes discussed in the interviews were able to place students in work training component, and either had subject matter expertise inhouse or were able to purchase the curriculum content from a trusted and reliable source. This sample is rare in South Africa, as Gamble and Hewlett (2022) explained in their study of vocational college teachers that the primary barrier to TVET delivery was access to basic hand tools and equipment, textbooks and infrastructure for teaching and learning. Thus, the five colleges in the sample did not experience the normal barriers to delivering their programmes and were specifically selected because they had a good record of meeting regulatory requirements of infrastructure, mandated classroom, workshop and workplace training allocated time and assessments. Thus, this kind of sample provided the best starting point to understand whether the behaviours and relationships in a college community could be related to appropriate expertise development in TVET learning programmes as resources are not an issue.

During fieldwork, two colleges (College 1 and College 2) stood out as delivering good preparation for work and one (College 3) was struggling. The other two (College 4 and College 5) colleges historically had a good track record of preparation for work, but they were not willing to provide recent student graduation numbers or discuss in detail how they approached learning programme development and delivery and – thus – it was difficult to ascertain how their track record was related to how they prepared and sequenced curriculum and managed their staff in the

college. In the case of College 1, College 2 and College 3, there was at least access to the last two cohorts of graduates and either through the college or in other interviews – we were able to ascertain a good picture of graduation rates and student placements in jobs. It was revealed in interviews that College 3's student's performance in national trade tests was lacking where all the students in the programme had failed their first attempt at the trade test, and that students were struggling to graduate and have the required certification to start working. We will present evidence in College 3 that contrasts with College 1 and College 2 to argue how the social characteristics in these colleges did seem to have an effect on their ability to deliver appropriate expertise development. The evidence shows how College 1 and College 2 carefully manage the relationships between the college and various actors in mediating, mentoring and collaborating in all aspects of developing and delivering training.

Regarding data analysis, we focused on all interviews using three social characteristics: mediation, collaboration and mentorship. We used a standard coding approach based on qualitative content analysis or QCA (e.g. Udo Kuckartz and Rädiker 2023). Both authors coded jointly using these three categories. However, after coding was accomplished, both authors decided to restructure the categories and re-distributed the categorised quotes among them: translation, partnership, teamwork and mediation. This was appropriate to develop more distinct categories resulting in a more differentiated picture of the characteristics.

4. Social characteristics of 'good' colleges

This section describes the data and analysis that represents the social characteristics in teaching and learning processes in a college, and especially in their relationship with employers, that seemingly had a strong connection to appropriate expertise development. Our use of 'social characteristics' may be vague and at times, confusing terms when discussing the kind of appropriate expertise development that occurs at vocational colleges. *What we mean by social characteristics is the ways in which college staff members relationally understand and perform their different functions in the process of developing a student's appropriate expertise in training to practise through building social relations with students, their parents and communities, employers, the state, professional bodies, recruiters and international professional standards bodies.* A broad theme in the evidence is deliberate relationship building within and outside of the college which is core to fulfilling their agenda of preparing students for work with different communities. In this paper, our analysis (Table 1) shows how vocational college community with internal and external social characteristics on what happens within the college (micro level) and what happens between the college, the state and employers (meso level).

Table 1. Social characteristics of colleges.

	Internal	External
Meso level (organisational)	Translation	Partnership
Micro level (individual)	Teamwork	Mediation

Firstly, the college deliberately builds collaborative relationships internally through teamwork among teachers, and externally through partnerships with employers. Secondly, colleges that successfully resolve conflicts internally through mediating skill expectations of students and externally with the regulatory and employer requirements in translating the curriculum.

In opening a dialogue on social characteristics in vocational colleges, some readers might question the importance of identifying such characteristics in teaching and learning processes. We argue that identifying and defining how colleges as institutions build capacity, and how they build and maintain relationships needed for developing appropriate expertise provides insight into how institutional concepts can manifest practically at college. A helpful contrast throughout the analysis is College 3 in the sample which was having problems with appropriate expertise development in their learning programmes and distinctly lacked the social characteristics discussed in this paper. These problems occurred despite College 3 having the correct equipment and infrastructure, up-to-date curriculum contents from a reliable and trusted subject matter expert and planned work placements with experienced trainers and notably, this college in South Africa would be considered very well resourced (Gamble and Hewlett 2022).

4.1. Translation

Vocational colleges deliver learning programmes that require training in two sites, workplace and college, and this requires translation of qualifications and intended curriculum requirements from the state in a plan for delivery that matches a sequence of teaching and learning curriculum staff members continually mediate regulatory mandates from the state and their associated quality assurance bodies. In the case of the two colleges, both accreditation and teaching and learning staff were involved at various national levels in dialogues about the qualification and the summative assessment (trade test) requirements. On a bureaucratic level, the college must show that they are meeting the requirements of the qualifications, with proof of reverse mapping the outcomes to the curriculum. This is a labour-intensive process, here the Regulatory Manager from College 2 explains that within the college staff involved in teaching and learning, qualified master artisans/craftsman and subject matter experts need to work in teams that develop content for the new curriculum, this is the initial stages which requires substantial mediation and collaboration in mapping of programme for early programmes development but more

substantially for regulatory purposes. One note from the explanation below is that the process is not linear and working with several teams for the learning programmes and the modules involves relying on the strength of people in the team to interpret and translate the regulatory requirements of a qualification for a learning programme.

Obviously, you need experts in terms of education, within the context of the teaching and learning strategy ... We started off ... with very well qualified master artisans, but they were not [educators] ... they became the subject matter experts that had to inform [the content]. But you also had to ... [build capacity to] teach... in the program development process. So, they become your focus groups, your subject matter experts and your task teams, but [we] utilise both internal and external staff with whom I have ... [worked with over a long period of time] in terms of programme development and design, to assist with the consolidation of information ... So that was the mapping ... [of] approximately six months, ... not necessarily by means of a linear approach, because I mean, you always fall back on people's strengths at the onset of a project like this to support [vocational college staff] and to capacitate [ensure teaching capacity] development of a particular module. (Regulatory Manager 1, College 2)

Additionally, as Teaching and Learning Expert 1 from College 1 describes the importance college teaching staff being able to skilfully interpret the state-intended curriculum documents because foundational parts of the curriculum are not always obvious:

I can give you an instance of one of our qualifications ... The qualification has only five knowledge modules, and they have four practical modules. But if you analyse that curriculum document, you will see that there is no foundational information. For instance, there is no mathematics, science, or [technical] drawings, which is very, how can I say that you need to have you need to understand and rigorous role in order to be able to understand the work (Teaching and Learning Expert 1, College 1)

The above quote highlights the importance of being able to translate the required regulatory intended curriculum to appropriate expertise development for work. In contrast, College 3 struggled to translate the intended curriculum despite having access to curriculum content from a reliable and trusted subject matter source. The three interviews connected to College 3 commented on the lack of both industry and teaching experience which seemingly hinder the ability to collaborate with the employers, where teaching staff struggle with the selecting and sequencing curriculum content to deliver appropriate expertise development.

In recruiting students for the learning programmes, College 1 and College 2 found that the regulatory documents entry requirements were lower than what was required for a student to be able to engage meaningfully with the contents of the learning programme. Without going into the details of entry requirements, it is interesting to note how this problem was addressed internally. College 1 offered students a foundational learning programme as

a requirement to enter their desired trade learning programme, while College 2 added almost a full year of 'extra' curriculum to the trade learning programme. These pre-requirements for entering the trade learning programme were communicated as foundational basics to the students and parents. In mediating the interpretation of regulatory documents, colleges were able to strategically prepare their students for the trade qualification in 'adding' curriculum time and content while still meeting the regulatory entry requirements. The problem with evaluating and assessing a potential student's ability to engage successfully with curriculum contents was frequently discussed in the entire data set, the problem often arises in adult learners who require new training or further professional development. One college in the sample focused solely on professional development working with employers and their insights into mediating the conflict between entry requirements on qualification documents and the evaluating potential students explains the dilemma vocational colleges face in navigating ensuring student readiness for a learning programme which also included a discussion on funding. The insights are that vocational colleges provide substantial amounts of extra coursework to ensure learner readiness for both full-time and part-time learning programmes to meet regulatory entry requirement

The section on translation/adaptation has presented evidence that shows how the vocational college is involved in various processes with the state regulators, internal staff and work-based trainers for learning programmes which can have its expression in translation and negotiation. Translation is where teams of different types of actors in the vocational college and in the workplace need to work together to interpret regulatory intended curriculum requirements for appropriate expertise development.

4.2. Mediation

This section reflects on how vocational colleges need to mediate expectations of students training with employers, where the data overwhelmingly show that both teaching and learning staff and workplace trainers need to communicate to have a shared understanding of the purpose of training. A key part of the TVET programme is workplace training, which is also an eligibility requirement for the national trade test. From an outsider's perspective, it may seem that students' work training component is separate from the college. However, there are several aspects of the training requirements that need to be communicated by the college to the work-based trainer, which may include administrative arrangements such as transportation. While there are strong mentorship and collaboration themes in how students are placed at a particular employer. There is continuous mediation of the relationship between the learning programmes requirements for training and the employer's expectations of the level of student's knowledge and skills. Here is Teaching and Learning Expert 2 at

College 2 explaining how reviewing and understanding employers' complaints on their perceived student's lack of preparation may not be part of curriculum:

And sometimes we need to say, to tell the employer, listen, this guy is still in training, you have to remember that he didn't get a red seal. He's still in training ... but if it's a knowledge thing, then we will say, okay, let's look at it. And then we will go and see what went wrong, because there's a lot of things that could go wrong there. And maybe it's not in our curriculum, but it should be because we follow up with the ... [regulatory body] on the curriculum. ... [requirements]. And it's not, if it's not part of the curriculum, we will explain to the employer, 'Okay, listen, but this is not part of the curriculum'. And maybe, maybe we will add it later if it's really a problem. (Teaching and Learning Expert 2, College 2)

The quote above highlights the importance of understanding that there could be several reasons why employers feel that the student is not prepared to enter the work training component of their training, there are two reasons highlighted above. Firstly, by explaining the student has not received 'the red seal' means that employers cannot expect that the student can function as a qualified tradesman and what the college must continuously highlight is that the student is still learning and in training. However, even in this context of having to negotiate the employer's unrealistic expectations of students, what the quote highlights is that the college investigates what went wrong and this investigation leads to our next reason. Secondly, the employer might expect the students to be trained in a particular area that is relevant to their business, but a TVET programme will focus on general training for the trade. In context, College 1 and College 2 described the extensive process of evaluating employer preferences for knowledge and skills. Later in the paper, the collaborative part of adding extra training at the college for a specific employer. Here, we focus on how colleges investigate and understand the context for employers' preferences, a Work Experience Manager at College 1 explains this back-and-forth process and resolving preference conflicts:

Apprentices went to a specific workplace. And one of the mentors said: No, hang on, I am not happy with these apprentices. And we had a big meeting called out because they are not at the standard that we expect and right. So, then we said, 'no, we are more than happy to listen to you'. And of course, we want to learn and understand if we have missed something. But what came out of that meeting ... is the workplace provider expectations based on how they do things. They forget that when we are training, we are following a particular curriculum, we are following a particular structured learning that this is what the apprentice should be able to know. And do after having done 123. So, when they come to you, then the onus is on you to take them from that point and develop them into the person that you want them to be. Yeah, so yes, so that indeed does happen. And I can say, from that meeting, a picture was painted, which satisfied all parties involved. Now to understand that, remember, this person [student] is an apprentice and is not yet also an [qualified] artisan. And yet, of which that was the expectation. Yeah, when I [work-based trainer] received this learner, in my, in my work section, I got no time to tell him how to do this. And that he should

know, then like, no, hang on, this person is still on that growth path is still going to get to where you are wanting them to get to. But at this stage, they've only done 123. But should you want them to do slightly over and above what they've learned? It is on you, then that's why they come to the workplace, get those experiences, so that they can now grow. And when they come back to us also, they're able to understand and integrate what we were teaching them. And now it should make sense to say: Oh, no wonder, when you are teaching us, you said we must look out [for] 123 because when I was in the workplace, the expectation was that I must use that knowledge or that skill to do 123. So yeah, you know, I think I'll answer you in that way. So that is how we address the issues where there are gaps. That's how we've been able to address that kind of disjoint[ness] between what we are doing and what are the expectations of our employers will host our learners. (Work Experience Manager 1, College 1)

The quote above highlights the push and pull factors in the expectations of employers and the college, and how these kinds of conflicts occurring from different expectations require substantial mediation. It is interesting to note that in College 3, this relationship was strained where a trainer highlighted how they provided feedback on the structure of curriculum delivery and felt that there were no changes.

At times mediation requires negotiation and communication where employer expectations or preferences can be unrealistic when considering the general training for a trade that the college must provide to ensure students are prepared to engage with work training component at different companies. What stands out in the evidence is the relationship where vocational colleges listen and understand the employers/workplace trainers' concerns but can explain the purpose of training and the contents of the learning programmes. This relationship allows for college staff to exercise professional judgement in what must be in curriculum and what is employer specific. In some cases, such as in College 2, the vocational college would provide employer specific training for apprentices. However, what is core to this relationship between the college and employer was the ability to arrive at a negotiated settlement where compromise occurs and both sides feel that their concerns were sufficiently addressed.

4.3. Partnership

From a broader perspective, coordinated market economies (Hall and Soskice 2001) where strong inter-company relations existed, comprehensive firm training, and where social actors work with education and training to provide a highly skilled labour market alongside appropriate employment opportunities were promoted as ideal TVET Systems (Wolf 2002). However, as scholars such as Wolf (2002) highlight when discussing attempts by the UK to imitate coordination of TVET system actors found in countries such as Germany were ultimately unsuccessful. She highlights that replicating a system of relationships that has been developed over centuries in another country is very difficult. In South

Africa, aspects of how the new TVET qualifications and intended curriculum were developed by communities of experts and practitioners at national level could be interpreted as the state's attempt to mimic the coordinated market economies collaboration for TVET training (Alphonsus 2023a). In contrast to the national coordination of TVET systems actors, the evidence below shows how vocational colleges collaborate at a local level and work with each other and employers to develop and deliver learning programmes. There are examples of compromise and could be interpreted as the 'give' and 'take' that needs to occur in relationships with various actors to successfully prepare students for work.

In the section on mediation, we covered how vocational colleges used different strategies to ensure students were at a particular level of knowledge and skills levels upon entering work training component. Work Experience Manager 1 of College 1 explained how they collaborated with employers where employers would recruit students for the trade qualification.

Their recruitment is a hybrid between us and the employer. Employers use their own sets of qualification requirements. Obviously, if I may go back with grade nine, the idea is grade nine, assuming that we have a vibrant and working technical education system in basic education. But what happens is that we find that your grade nine even though it's legislated, doesn't necessarily give the student the minimum competencies that are required for the program. Then employers use your report 191 or NCV as a benchmark, we also use that so that we at least ensure that the student has some requisite knowledge for them to handle the problem was there is also some technical drawing, there is also related theory. There is also basic mathematics and science that a particular student must possess in order to handle the program. (Work Experience Manager 1, College 1)

Though the use of report 191 or the previous National Vocational Qualification (NCV) is a contentious subject in South Africa as it is considered an out-of-date requirement for trade programmes. What the above quote shows is that in using the requirements employers understand in a collaborative relationship with the college offering the training, both employers and the college were able to recruit students with the requisite knowledge and skills needed to engage with the curriculum in the learning programme.

In the mediation section, we highlighted the potential conflicts in negotiating with employer expectations that may be unrealistic. In the new occupational qualifications, there is some pressure on colleges to start the work placement part of the student's training in the six weeks to three months¹ – especially in the case of colleges that have received state funding for rolling out the new qualifications. In the following quote, Teaching and Learning Expert 1 from College 1 reflects on how they collaborated with the employers to ensure that students had covered a certain amount of curriculum before entering the workplace and that having longer periods between work placement rotations allowed for the college to add extra curriculum content that was specific to the employer's production processes:

Hence, where we are now - we have employers that prefer at least to two times that our two to three times that the most that our learners are with us, and that is after we've consolidated a certain number of modules that will make them more helpful in the workplace, then they go to the workplace, the workplace, and they spent a duration of time. And in that time slot, of course, then we follow through to go and also observe what they are doing in the workplace and support them that whatever they've been learning at the college is applying to what they're doing in the workplace. We identify where they shortcomings in terms of what we have taught them and maybe what the employer is expecting. And if the employer also has aspects that we identified, this actually can be helpful for all apprentices if it's taught by us, as a training provider, we also take those aspects and bring it and expose all our apprentices to it. So that's how we bridge that gap in terms of rotations between the workplace and us. (Teaching and Learning Expert 1, College 1)

Thus, our evidence suggests that collaboration at the local level between the college and employers were levels of students' knowledge and skills are mutually agreed upon prior to entering the work-based training competent reveals the benefits of negotiated settlement within a relationship that can support the agile training needs for an evolving work environment.

4.4. Teamwork

The evidence on teamwork focuses on how colleges come together to develop and deliver learning programmes in two ways. Firstly, the development process requires different subject matter experts to select, develop and sequence curriculum contents. Secondly, the deliberate coaching of junior teaching and learning staff.

In College 1 and College 2, the process of developing and sequencing curriculum content requires different subject matter experts to internally collaborate. Admittedly, most training in traditional trades has some overlap – for example, basic skills in welding were required in training in the electrician, boilermaker and several other trades. Thus, working across different subject matters collaboratively was required, Teaching and Learning Expert 2 from College 2 explains:

... The concern is that you cannot assume that the electrician, let's take the electricians for example, the electrician qualification that you will have one type of SME [subject matter expert], you're going to have an SME for every module in that qualification ... The same with welding. The industry out there is TIG [type of welding], and arc welding is completely different. There's not a lot of companies in South Africa that cover all of them [types of welding] at the same level. So, your lectures will also be SMEs on a specific module. And what makes it difficult for training colleges ... you need to capacitate each lecturer to become a subject matter expert on all the modules, because the curriculum is so woven together. (Teaching and Learning Expert 2, College 2)

A common theme across College 1 and College 2 was that working collaboratively was not necessarily linear as different subject matter

experts within the college would have to negotiate the sequencing of the curriculum and allocating time to particular subjects. Despite these conflicts, both colleges agreed that students benefited from diverse subject matter experts working together to sequence the curriculum for building appropriate expertise for practice. One aspect of this teamwork that is not immediately evident is how senior staff will guide the process, and often occurs in coaching relationships between senior and junior staff.

One distinct feature of College 1 and College 2 was that all the teaching and learning staff at the time of the interviews was engaged in further professional development. More importantly, senior staff members advised on what kind of professional development junior staff, which made knowledge and skills development an evolving process in the college. The management and teaching and learning staff at College 1 explained that moving an occupational practitioner to a teacher in a vocational college required further training in teaching and assessment, and was a focused pathway in their hiring processes. In College 1 and in the context of the launch of a new structure of the programme, a teaching and learning expert explains below both peer-to-peer mentoring and senior staff to junior staff mentoring were both needed:

Here that can be a challenge is when a person is, say, new to the environment of apprenticeship training, and they are expected to deliver this kind of curriculum. They [junior staff] would find it difficult to plan, or rather to even come up with a way that would work that will present ... what is expected of them in terms of teaching and learning. So, we [senior staff] ... fortunately, because we are well versed in how you approach teaching and learning. We [senior staff] were able to identify the modules that we should preferably keep together, and those that are better suited to stay apart ... So, we [senior staff] were able to do that. But the challenge is that that lack of integration, sometimes may pose a challenge to people [junior staff] ... Yeah. And that's one aspect that I picked up. And it took us time also, by the way ... myself, fortunately, by trade, I'm ... [occupational practitioner], I could support my facilitators [junior staff], of which they were new. They didn't know how to do this. (Teaching and Learning Expert 1, College 1)

The above quote highlights how teamwork encompassed mentoring when senior staff would prepare junior staff to deliver curriculum. In contrast, the development and delivery of the curriculum relied on an external subject matter expert and an internal staff member in College 3. This relationship went no further than the college purchase of the curriculum content from the subject matter expert.

5. Discussion and conclusion

The analysis of the evidence suggests a mutually dependent relationship between appropriate expertise development and the social characteristics of vocational colleges, specifically through translation, mediation, partnership

and teamwork. In analysing the data using the occupational capacity conceptual framework, what we found was that while we can argue that connections between specialised knowledge (i.e. systematically organised knowledge in curriculum delivery) for appropriate expertise development is shaped by actors (state, communities of practice and employers) in the social organisation of work. What our analysis suggests is missing an understanding of the role of vocational colleges in identifying, developing, maintaining and innovating specialised knowledge for appropriate expertise development in responding to the agendas of TVET system actors and the changing dynamics (i.e. rapidly changing technology) of the practice. Additionally, the research provides some insight into an alternative coordinating mechanism found in the vocational college community for a TVET system that localises and contrasts with bureaucratic systems where the coordination mechanism for requirements for and the delivery of appropriate expertise development is centralised nationally.

In this paper, we argue there is a connection between the social characteristics of vocational colleges and their ability to deliver appropriate expertise development. We outlined four social characteristics in the evidence. Firstly, college receives the requirements for training from the state which must be translated into a curriculum for appropriate expertise development. One aspect that came across was the need for experience in senior staff to identify, add and develop a flow for teaching and learning in a team of diverse disciplinary experts for appropriate expertise development. Secondly, the ability of the vocational college to mediate and communicate the expectations with work-based trainers seemed vital to successfully delivering cohesive appropriate expertise development on the two different sites of the employer work environment and vocational college. In mediating, it is important for the vocational college to work with the employers who host the work training component to arrive at mutually beneficial agreements; this was reflected in how colleges would offer extra training related to specific workplaces. Thirdly, vocational colleges that can partner with industry and employers about curriculum content where they establish their trustworthiness in appropriate expertise development can helpfully shape the power dynamics. A helpful contrast to exercising collaboration is CBT approaches, which often prioritise task performance defined by employers which places a heavy weighting on employer needs rather than the needed flow of teaching and learning that supports appropriate expertise development beyond task performance. Vocational colleges collaborating with workplace trainers where they arrive on a negotiated settlement on appropriate levels of knowledge and skills for the workplace were more likely to ensure appropriate expertise development in the work training component. Fourthly, teamwork at the vocational college were working together in diverse disciplinary teams and senior staff coaching junior staff in various aspects of the teaching process built the internal expertise required for the professional

judgement in identifying, developing, organising and delivering TVET programmes that built appropriate expertise development.

In conclusion, the social characteristics of vocational colleges are fundamental to their success in developing appropriate student expertise. By fostering strong relationships, translating training requirements, mediating expectations for workplace training, collaborating on curriculum development with industry and employer and developing a diverse disciplinary team for delivering the learning, vocational colleges create an environment conducive to comprehensive and effective learning. These characteristics are vital for ensuring that students are well-prepared for the workforce, meeting both regulatory standards and industry expectations and beyond that the development of appropriate expertise. Overall, this research highlights the critical role of vocational colleges as a builder of the community where appropriate expertise development can manifest. However, this is true only for those colleges that are sufficiently equipped with resources.

Note

1. There is some debate on where these perceptions of early work placement come from as the regulatory documents do specify a specific time block. However, public funding associated with a particular pilot programme of the new occupational qualifications contained an intended curriculum that specified the early work placement (Alphonsus 2023a) and this suggests that there may have been some conflation with the regulatory intended curriculum and more explicit intended curriculum used for the pilot programmes.

Acknowledgements

We are grateful to the participants who gave generously of their time to provide detailed explanations of teaching and learning processes. The paper initially emerged as a discussion between colleagues, and we appreciated the guidance of Joy Papier, Leesa Wheelahan, Volker Wedekind and Martin Johnson in moving our ideas forward. The reviewers made thoughtful suggestions that improved the paper substantially, and we thank them for their insights.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

The writing of this article was partially supported by the National Research Foundation SARCHI Chair: TVET studies.

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